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August 4, 2006

The Honorable John J. Doll
Commissioner for Patents
U. S. Patent and Trademark Office
Alexandria, VA 22313-1450

Mail Stop Comments
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Attn: Linda Therkorn, Office of the Deputy Commissioner for Patent Examination Policy, and
Ray Chen, Office of the Solicitor

Re: Comments on Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility

Dear Commissioner Doll:

On October 26, 2005, the PTO issued "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility." The Guidelines were published in the Official Gazette on November 22, 2005 [1300 OG 142], and a notice was published in the Federal Register on December 20, 2005 requesting comments on the Interim Guidelines [70 FR 75451]. The time for submitting comments was extended to take into account the Supreme Court's expected decision in *Laboratory Corp. of America Holdings v. Metabolite Laboratories, Inc*. (argued March 21, 2006).

It appears that the Interim Guidelines are meant to replace the 1996 "Examination Guidelines for Computer Related Inventions," notwithstanding that they do not address the nuances or the specifics of computer-related inventions but are drafted more broadly so as to apply to all subject matter generally. Annex IV to the Interim Guidelines constitutes much of the computer-specific material from the 1996 Guidelines, but it includes at least one significant modification, identified below.

Part I of these comments is directed to substantive comments[1] on specific aspects of the Interim Guidelines. Part II of these comments addresses the questions posed by the PTO and identifies particular issues as being of interest.

1. Other comments of a more minor nature, e.g., certain inconsistencies in claim language or with legal precedent, are noted in Appendix A attached at the end of these comments.

Part I

Section III. In Section III of the Interim Guidelines, the Examiner is instructed to first "conduct a thorough search of the prior art." This presents the possibility for confusion. Regardless of whether a prior art search is or can be performed (in some cases the claims may simply not admit of a search because they may not be sufficiently described) before assessing subject matter eligibility, the Guidelines should state that when assessing subject matter eligibility, an Examiner should *assume* that the claimed invention meets the requirements of 102, 103, and 112. Otherwise, there is a tendency, even in the case law, to rely on 102, 103, and/or 112 reasoning for a 101 rejection.

Section IV.C.2.a. The Interim Guidelines use a narrow formulation of the "transformation" test, as set forth in *Gottschalk* rather than the broader test as formulated in *Cochrane*. *Compare Cochrane v. Deener*, 94 U.S. 780, 788 (1877) ("A process is a mode of treatment of certain materials to produce a given result. It is an act, or series of acts, performed upon the ***subject-matter*** to be transformed and reduced to a different state or thing.") *with Gottschalk v. Benson*, 409 U.S. 63, 70 (1972) ("Transformation and reduction of ***an article*** 'to a different state or thing' is the clue to the patentability of a process claim that does not include particular machines.").

Limiting an eligible process to one that transforms "an article" and excluding a process that transforms other types of "subject matter" (such as electromagnetic signals or other types of energy) is inconsistent with the *Morse* and *Telephone* cases and is arguably the wrong result. It is also inconsistent with the Federal Circuit's *AT&T* case, which expressly reads the *Gottschalk* formulation (quoted in *Diehr*) as "an example, not an exclusive requirement" and then notes that the *Arrhythmia* case involved transformation of electrical signals. 172 F.3d at 1359.

In *In re Prater*, 415 F.2d 1378, 1387-88 (CCPA 1968), Judge Smith criticized reliance on the *Cochrane* transformation test as a limiting definition for eligible processes: "This passage [from *Cochrane*] has sometimes been misconstrued as a "rule" or "definition" requiring that all processes, to be patentable, must operate physically upon substances. Such a result misapprehends the nature of the passage quoted as *dictum*, in its context, and the question being discussed by the author of the opinion. To deduce such a rule from the statement would be contrary to its intendment which was not to *limit* process patentability *but to point out that a process is not limited to the means used in performing it*." In *Prater*, the CCPA characterized *Morse* as a case "involving processes acting on energy rather than physical matter."

In Section IV.C.2.a, the Interim Guidelines also state that the "transformation" test is a way to determine whether the claimed invention is a practical application of an "abstract idea, law of nature, or natural phenomenon." As set forth more fully below, the "transformation test" should be eliminated in favor of the "practical application" test. At most, the transformation test may only be a way to determine whether the claimed invention is a practical application of an "abstract idea" or "law of nature" and not of a "natural phenomenon." This is because there are natural phenomena (e.g.,

photosynthesis) that would appear to meet the transformation test. Thus, the Interim Guidelines are in error when they state: "If the examiner finds such a transformation or reduction, the examiner shall end the inquiry and find that the claim meets the statutory requirement of 35 U.S.C. § 101."

Section IV.C.2.b. Based on the placement of Section IV.C.2.b in the organization of the Interim Guidelines, the Guidelines appear to presume that the "useful, concrete, and tangible result" test is another way to determine whether the claimed invention is a practical application of an "abstract idea, law of nature, or natural phenomenon." However, it is arguably only a way to determine whether the claimed invention is a practical application of an "abstract idea" or "law of nature" and not of a "natural phenomenon." This is because there can be natural phenomena (e.g., a new mineral discovered in the earth or a new plant found in the wild) that provide "useful, concrete, and tangible" results. Notably, unlike Section IV.C.2.a, the Interim Guidelines do not *state* that if there is a "useful, concrete, and tangible result," then the subject matter is eligible subject matter. Instead, they state: "If the claim is directed to a practical application of the § 101 judicial exception producing a result tied to the physical world that does not preempt the judicial exception, then the claim meets the statutory requirement of 35 U.S.C. § 101." (Section IV.C.2.b. page 20).

Given the foregoing, one may question whether the "practical application" test is really the appropriate test for "natural phenomena." It seems that the real question appears instead to be whether the claim as a whole encompasses/covers a natural phenomenon. This also appears to be the real question for abstract ideas and laws of nature. The "practical application" test appears to be a way of answering this broader question for abstract ideas and laws of nature, but not necessarily for natural phenomena. The preemption analysis then analyzes whether—even if a claim does not cover/encompass an "abstract idea, law of nature, or natural phenomenon"— it gets too close to doing so.

In this vein, the following bears noting: At times, the Interim Guidelines speak of whether "a claim *includes* a Sec. 101 judicial exception." (Section IV.C.1. page 18; *see also* section IV.C.2, page 19). This language is ambiguous. It appears that the intent of the Guidelines is that the word "includes" means "requires" or "recites," but the word could be taken to mean "covers" or "encompasses." It Guidelines appear to mean the former and not the latter because the Guidelines later state that a claim should be held unpatentable if it covers/encompasses both eligible and non-eligible subject matter (Section IV.C.2.b, page 21), whereas a claim may be patentable if it requires the use of non-eligible subject matter in combination with additional limitations.

The Guidelines posit that "tangible" in the rubric "useful, concrete, and tangible" means "the opposite…of…'abstract'" and that "concrete" means "repeatable." (Section IV.C.2.b(2), (3), pages 21-22). One might question whether "concrete" means "repeatable." None of the three Federal Circuit cases applying the "useful, concrete, and tangible" test inquire as to whether the results provided by the claimed invention are

"repeatable." Instead, the three cases appear to equate the terms "concrete" and "tangible" as both meaning "non-abstract."

In *Alappat*, the Federal Circuit reasoned as follows: "the claimed invention as a whole is directed to a combination of interrelated elements which combine to form a machine for converting discrete waveform data samples into anti-aliased pixel illumination intensity data to be displayed on a display means. …[C]laim 15 is limited to the use of a particularly claimed combination of elements performing the particularly claimed combination of calculations to transform, i.e., rasterize, digitized waveforms (data) into anti-aliased, pixel illumination data to produce a smooth waveform." 33 F.3d at 1544. There was no inquiry into "repeatability."

In *State Street Bank*, the Federal Circuit characterized *Alappat* as follows: "In *Alappat*, we held that data, transformed by a machine through a series of mathematical calculations to produce a smooth waveform display on a rasterizer monitor, constituted a practical application of an abstract idea…, because it produced a 'useful, concrete and tangible result'—the smooth waveform." 149 F.3d at 1373. The *State Street* court then characterized *Arrythmia Research* as a case involving "a practical application of an abstract idea…, because it corresponded to a useful, concrete or tangible thing—the condition of a patient's heart." *Id.* A characterization of "the condition of a patient's heart" as being "a useful, concrete, or tangible thing" seems inconsistent with "concrete" meaning "repeatable," since "the condition of a patient's heart" is not necessarily "repeatable." The *State Street* court then analyzed its own facts: "Today, we hold that the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application…because it produces 'a useful, concrete and tangible results'—a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." *Id.* It would be strange to characterize a "momentarily fixed" "final share price" as being "repeatable," yet that is what the *State Street* court characterized as being "useful, concrete and tangible."

In *AT&T v. Excel*, the Federal Circuit dealt with a process that resulted in "a signal useful for billing purposes." 172 F.3d at 1358. Specifically, the court characterized a "PIC indicator" that "represents information about the call recipient's [primary interexchange carrier ("PIC")]" as being "a useful, non-abstract result that facilitates differential billing of long-distance calls made by an IXC's subscriber." This analysis implies that the phrase "concrete and tangible" in the rubric "useful, concrete and tangible" simply means "non-abstract." *AT&T* did not characterize the PIC indicator as being a "repeatable" result.

Section IV.D. The Interim Guidelines state that the choice for an examiner is to decide "whether it is more likely than not that the claimed invention as a whole either falls outside of one of the enumerated statutory classes or within one of the exceptions to statutory subject matter." (Section IV.D, page 24). Stating these as opposing options does not seem accurate. The claimed invention as a whole could fall within one of the enumerated statutory classes but also be within one of the exceptions. For example, a

mineral found in the wild could be a "composition of matter," but it is also a "natural phenomenon." A more correct statement might instead be something like "whether it is more likely than not that the claimed invention as a whole falls within one of the enumerated statutory classes *and outside any* of the exceptions to statutory subject matter."

In Section IV.D., the Interim Guidelines further state: "After the examiner identifies and explains in the record the basis for why a claim is for an abstract idea with no practical application…." This statement appears to be lacking in two ways. First, it refers only to abstract ideas and not to "laws of nature" and "natural phenomena." (See discussion above about whether "practical application" test is really the appropriate test for natural phenomena in any event.) Second, it ignores the "preemption" analysis that the Guidelines (and the case law) impose.

Sections V and VI. In Sections V and VI, the Interim Guidelines state that the Examiner should evaluate compliance with sections 102, 103, and 112. It appears that these sections were simply carried over from the 1996 Examination Guidelines for Computer-Related Inventions. Although subject matter eligibility was one of the thorniest issues addressed by the 1996 Guidelines, those Guidelines were not only Guidelines for assessing subject matter eligibility but for assessing *patentability* of "computer-related inventions." Thus, it made sense to address sections 102, 103, and 112 in the 1996 Guidelines. It does not make sense to do so here, since these are Guidelines for assessing "patent subject matter eligibility" only. That said, it is useful to point out that qualifying as eligible subject matter does not end the inquiry and that the hurdles to patentability in 102, 103, and 112 remain, but a summary of the length in the Interim Guidelines of how to do so (and with separate sections for each) seems out of place in these Interim Guidelines. The Examiner can simply be referred to the other applicable portions of the MPEP.

Annex III. In Annex III, Section c(i) entitled "The Mental Step Test" (pages 46-47) the Interim Guidelines state: "If all the steps of a claimed process can be carried out in the human mind, examiners must determine whether the claimed process produces a useful, tangible, and concrete result, *i.e.*, apply the practical application test set forth in *State Street*." This is an interesting scenario. Can it actually occur? How can a process in which *all* of the claimed steps are carried out in the human mind produce a "tangible" and "concrete" result? It seems that there must be some "output" of the result from the human mind via speech or writing, etc. in order to produce a "tangible" and "concrete" result. If that is the case, then there is at least one step that is not carried out in the human mind.

Annex IV. In Annex IV (pages 50-57), it is asserted that various categories of computer-related subject matter are not statutory, but these assertions are made without engaging in the analysis set forth in the Interim Guidelines themselves. Most of Annex IV is apparently a reproduction of that portion of the 1996 Computer-Related Guidelines related to eligibility. However, Annex IV does not apply the analysis set forth in the

Guidelines, and therefore there is a potential disconnect between the analysis set forth in the Guidelines and the conclusions set forth in Annex IV.

Annex V. In Annex IV, Section (c) (pages 55-57), it states that "it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101." This is a *reversal* of position from previous PTO policy and BPAI case law. Up until now, the PTO has stated that "a signal claim directed to a practical application of electromagnetic energy is statutory regardless of its transitory nature." MPEP § 2106 IV.B.1.c. (citing *Morse*). And the BPAI so ruled in nonprecedential Appeal No. 2002-1554 (2003 WL 23175056). In the new Interim Guidelines, the PTO reasons that signal claims do not fall within any of the four statutory categories. The PTO appears to reason that a signal is not a "manufacture" because it is energy. Evidently, the PTO believes that a "manufacture" must constitute matter, and it is insufficient that energy is a physical "thing." However, this seems to beg the question as to why "energy" does not constitute "matter" within the meaning of § 101, as previously recognized by the PTO.

In *Diamond v. Chakrabarty*, the Supreme Court stated: "this Court has read the term 'manufacture' in accordance with its dictionary definition to mean 'the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand labor or by machinery.'" 447 U.S. at 308 (quoting *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11 (1931)). This definition might appear to preclude electrical signals because signals are not traditionally thought of as "articles." However, the *Chakrabarty* Court did not rely on this definition to decide that the man-made bacterium at issue qualified as a "manufacture" or "composition of matter." Rather, the Court appears to quote this definition as a background matter and immediately thereafter states: "In choosing such expansive terms as 'manufacture' and 'composition of matter,' modified by the comprehensive 'any," Congress plainly contemplated that the patent laws would be given wide scope." 447 U.S. at 308. Indeed, it is questionable whether the *Chakrabarty* Court could have reached the result it did if it had applied the entirety of the *Brogdex* definition. (And the result in *Brogdex* has been heavily criticized. CHISUM ON PATENTS § 1.02[3] ("The reasoning in the Court's opinion is very weak…It must be concluded that the [*Brogdex*] treatment of the meaning of 'manufacture' is of little or no precedential value.")). In any event, the *Chakrabarty* Court <u>also</u> approvingly cited as background the legislative history for section 101, which states: "A person may have 'invented' a machine or ***manufacture***, which may include ***anything*** *under the sun made by man*…."). A man-made electric signal is a "[]thing…made by man." If the definition of "manufacture" in the legislative history is to apply, the PTO's new position is incorrect. S*ee also* Nancy J. Linck & Karen A. Buchanan, *Patent Protection for Computer-Related Inventions*, 18 Hastings Comm. & Ent. L.J. 659, 677-78 (Summer 1996) ("In the future, the PTO is expected to interpret 'computer-readable medium' broadly, perhaps to include a carrier wave for a data signal…Presuming that the signal is manufactured, as opposed to naturally occurring, there appears to be little basis for rejecting such a claim….").

In general, the courts have widely guided themselves by the "anything under the sun" legislative history quoted above. In *Alappat*, for example, the Federal Circuit reviewed *Chakrabarty* and cited the legislative history, stating: "Thus, it is improper to read into § 101 limitations as to the subject matter that may be patented where the legislative history does not indicate that Congress clearly intended such limitations." 33 F.3d at 1542 (en banc). This tends to indicate that the courts would rely on the legislative history statement rather than the *Brogdex* definition and would therefore determine that a man-made electrical signal is a "manufacture."

It is clear that methods for generating man-made electrical signals and machines for transmitting and receiving such signals constitute eligible subject matter (see the Samuel Morse and Alexander Graham Bell cases as well as the *Arrythmia* and *Alappat* decisions). The one difference, however, is that the issue with a man-made computer program product was whether it fell within the "printed matter exception," whereas the issue with a man-made electrical signal is apparently whether non-matter can fall within the statutory "manufacture" category.

Arguably, the PTO's current position is inconsistent with the result in the *Morse* case. Only the 8th of Morse's claims was held invalid. The fifth and sixth claims were arguably signal claims, especially when viewed in light of language at the end of the sixth claim. The fifth and sixth claims read as follows:

> Fifth. I claim, as my invention, the system of signs, consisting of dots and spaces, and of dots, spaces, and horizontal lines, for numerals, letters, words, or sentences, substantially as herein set forth and illustrated for telegraphic purposes.
>
> Sixth. I also claim, as my invention the system of signs, consisting of dots and spaces, and of dots, spaces, and horizontal lines, substantially as herein set forth and illustrated, in combination with machinery for recording them, *as* ***signals*** *for telegraphic purposes*.

56 U.S. at 86. The PTO's statement of its previous position in the MPEP § 2106 relied on *Morse* as authority for its previous position.

There has been no intervening court decision or congressional enactment which would require the PTO to change its prior position on this issue. As a matter of policy, many patents have likely been granted in reliance on the PTO's previous position, which would now be called into question. A few examples were provided in Steve Kunin's presentation to AIPLA on October 28, 2005. These include: U.S. Pat. No. 6,052,150 to Toshiba; U.S. Pat. No. 5,500,739 to Samsung; U.S. Pat. No. 5,534,933 to Samsung; and others.

This situation is analogous to the situation in *In re Beauregard* in that the PTO's current position unjustifiably precludes the most effective type of protection for direct infringement for a particular industry. There are sound policy reasons why a signal or carrier wave used to provide software to users should be treated no differently for

purposes of patent eligibility than a computer disc such a CD or floppy disk. It is highly questionable whether a signal or carrier wave is not "tangible" in any event. Simply because one cannot see or touch the medium does not change the reality that such a medium nonetheless is real and is used every day to transmit and download software just as effectively as software contained on a CD. Thus, to deny patent eligibility for such claims is to ignore the reality that such media is most certainly employed in the using and selling of software carried by such a medium, and thus denies claims to a patent owner that would otherwise provide a basis for asserting direct infringement against competitors, thereby relegating such subject matter to assertions of indirect infringement only, with no sound policy basis for doing so. To deny such computer program products of patent protection on this basis appears to be exalting form over substance. Moreover, treating so-called "signal" claims differently from other kinds of computer readable media (e.g., that wireless signals are not tangible, and cannot tangibly embody a computer program or process since a computer cannot understand/realize (i.e. execute) the computer program or process when embodied on the data signal) is equally as true for other media such as floppy disks or CDs. Executable instructions on a disk or CD, like those carried by a signal, also cannot be understood or executed until those computer-executable instructions are read from the disk or CD into the computer's RAM. This is no different for a carrier signal, and hence the asserted factual distinction as to "tangibility" simply lacks merit.

Respectfully submitted,

Rick D. Nydegger

PART II

In the Federal Register, the PTO states that it is particularly interested in comments addressing five questions. These questions and responses to them are set forth below.

(1) While the Patent Subject Matter Eligibility Interim Guidelines explain that physical transformation of an article or physical object to a different state or thing to another establishes that a claimed invention is eligible for patent protection, Annex III to the Patent Subject Matter Eligibility Interim Guidelines explains that identifying that a claim transforms data from one value to another is not by itself sufficient for establishing that the claim is eligible for patent protection. Therefore, claims that perform data transformation must still be examined for whether there is a practical application of an abstract idea that produces a useful, concrete, and tangible result. Is the distinction between physical transformation and data transformation appropriate in the context of the Patent Subject Matter Eligibility Interim Guidelines? If not, please explain why and provide support for an alternative analysis.

In the first place, as noted above, it is questionable to state that "physical transformation of an article or physical object to a different state or thing to another establishes that a claimed invention is eligible for patent protection." A natural phenomenon such as photosynthesis meets this transformation test but is not eligible for patent protection.

Second, as also noted above, the transformation test is stated too narrowly in Section IV.C.2.a of the Guidelines. *Compare Cochrane v. Deener*, 94 U.S. 780, 788 (1877) ("A process is a mode of treatment of certain materials to produce a given result. It is an act, or series of acts, performed upon the ***subject-matter*** to be transformed and reduced to a different state or thing.") *with Gottschalk v. Benson*, 409 U.S. 63, 70 (1972) ("Transformation and reduction of ***an article*** 'to a different state or thing' is the clue to the patentability of a process claim that does not include particular machines.").

Limiting an eligible process to one that transforms "an article" and excluding a process that transforms other types of "subject matter" (such as electromagnetic signals or other types of energy) is inconsistent with the *Morse* and *Telephone* cases and is arguably the wrong result. It is also inconsistent with the Federal Circuit's *AT&T* decision, which expressly reads the *Gottschalk* formulation (quoted in *Diehr*) as "an example, not an exclusive requirement" and then notes that the *Arrhythmia* case involved transformation of electrical signals. 172 F.3d at 1359; *see also In re Prater*, 415 F.2d 1378, 1387-88 (CCPA 1968) ("This passage [from *Cochrane*] has sometimes been misconstrued as a "rule" or "definition" requiring that all processes, to be patentable, must operate physically upon substances. Such a result misapprehends the nature of the passage quoted as *dictum*, in its context, and the question being discussed by the author of the opinion. To deduce such a rule from the statement would be contrary to its intendment which was not to *limit* process patentability *but to point out that a process is*

not limited to the means used in performing it.") (characterizing *Morse* as a case "involving processes acting on energy rather than physical matter.").

Third, the narrower version of the transformation test was not the justification for the result in *Gottschalk*. *See* CHISUM ON PATENTS § 1.03[6][c] ("The words 'clue' and 'it is argued' leave uncertain the court's position on the *Cochrane v. Deener* restrictive definition of a process…Standing alone it does not provide a satisfactory reason for the holding in *Gottschalk*.").

An analysis that draws a distinction between physical transformation and data transformation is as faulty as an analysis that draws a distinction between the transformation of matter and the transformation of energy. Instead, the answer is simply to eliminate the transformation test altogether in favor of the "practical application" test. In this way, there will be no need to discuss an exception to the general analysis into Annex III for "data transformation." The transformation test was never meant to distinguish eligible processes from non-eligible processes. As stated in *In re Prater*, the transformation test was first introduced "not to limit process patentability but to point out that a process is not limited to the means used in performing it." 415 F.2d at 1387-88. It is too broad in some respects and too narrow in others. If it is applied so narrowly as to exclude all data transformation, then it also excludes transformation of the data and signals at issue in the *Arrythmia*, *State Street*, *Morse*, and *Telephone* cases. Yet, if it is applied so broadly as to include all data and signal transformation, then it may also include the method held ineligible in *Gottschalk*. The best test is the "practical application" test, and the "useful, concrete, and tangible test" is the best sub-test for "abstract ideas" and "laws of nature."

Thus, an alternative analysis is as follows: The subject matter defined by a claim is eligible subject matter if: (1) The claimed invention falls within an enumerated statutory category; and (2) the claim does not cover (i.e., encompass) an "abstract idea," a "law of nature, or a "natural phenomenon" but is instead limited to a practical application of any applicable "abstract idea, law of nature, or natural phenomenon"; and (3) the claim does not preempt all substantial practical applications of an "abstract idea," a "law of nature," or a "natural phenomenon." Something is a "practical application" of an "abstract idea" or "law of nature" (but not necessarily a natural phenomenon) if it provides a "useful, concrete, and tangible" result. The transformation of matter or energy into a different state or thing is not dispositive, and should not be viewed as the exclusive or definitive test.

(2) Is the USPTO interpretation of *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F.3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998), as holding that if there is no physical transformation, a claimed invention must necessarily, either expressly or inherently, produce a useful, concrete, and tangible result (rather than just be "capable of" producing such a result) either too broad or too narrow? If so, please suggest an alternative interpretation and reasons therefore.

As noted above, the transformation test should be abandoned as insufficient in and of itself, and the limits of the "useful, concrete, and tangible result" test should be recognized in connection with "natural phenomena." However, this question presents the additional issue as to whether the "useful, concrete, and tangible result" test should be a "*capable of producing* a useful, concrete, and tangible result" or a "*produces* a useful, concrete, and tangible result" test.

The words "capable of" do not appear in the analysis of *Alappat*, *State Street*, or *AT&T*. As such, there is no indication in those cases that "capable of" would be sufficient. It appears that the effect of using a "capable of" test could be to allow claims that cover both non-abstract (do produce useful, concrete, and tangible results) and abstract subject matter (only capable of producing useful, concrete, and tangible results). This should not be allowed.

(3) As the courts have yet to define the terms "useful," "concrete," and "tangible" in the context of the practical application requirement, are the explanations provided in the Patent Eligibility Interim Guidelines sufficient? If not, please suggest alternative explanations.

None of the three Federal Circuit cases applying the "useful, concrete, and tangible" test inquires as to whether the results provided by the claimed invention are "repeatable." Instead, the three cases appear to equate the terms "concrete" and "tangible" as both meaning "not abstract."

In *Alappat*, the Federal Circuit reasoned as follows: "the claimed invention as a whole is directed to a combination of interrelated elements which combine to form a machine for converting discrete waveform data samples into anti-aliased pixel illumination intensity data to be displayed on a display means. …[C]laim 15 is limited to the use of a particularly claimed combination of elements performing the particularly claimed combination of calculations to transform, i.e., rasterize, digitized waveforms (data) into anti-aliased, pixel illumination data to produce a smooth waveform." 33 F.3d at 1544. There was no inquiry into "repeatability."

In *State Street Bank*, the Federal Circuit characterized *Alappat* as follows: "In *Alappat*, we held that data, transformed by a machine through a series of mathematical calculations to produce a smooth waveform display on a rasterizer monitor, constituted a practical application of an abstract idea…, because it produced a 'useful, concrete and tangible result'—the smooth waveform." 149 F.3d at 1373. The *State Street* court then characterized *Arrythmia Research* as a case involving "a practical application of an abstract idea…, because it corresponded to a useful, concrete or tangible thing—the condition of a patient's heart." *Id.* A characterization of "the condition of a patient's heart" as being "a useful, concrete, or tangible thing" seems inconsistent with "concrete" meaning "repeatable," since "the condition of a patient's heart" is not necessarily "repeatable." The *State Street* court then analyzed its own facts: "Today, we hold that the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical

application…because it produces 'a useful, concrete and tangible results'—a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." *Id*. It would be strange to characterize a "momentarily fixed" "final share price" as being "repeatable," yet that is what the *State Street* court characterized as being "useful, concrete and tangible."

In *AT&T v. Excel*, the Federal Circuit dealt with a process that resulted in "a signal useful for billing purposes." 172 F.3d at 1358. Specifically, the court characterized a "PIC indicator" that "represents information about the call recipient's [primary interexchange carrier ("PIC")]" as being "a useful, non-abstract result that facilitates differential billing of long-distance calls made by an IXC's subscriber." This analysis implies that the phrase "concrete and tangible" in the rubric "useful, concrete and tangible" simply means "non-abstract." *AT&T* did not characterize the PIC indicator as being a "repeatable" result.

An alternative analysis and one that seems more consistent with the Federal Circuit's treatment in *Alappat, State Street* and *AT&T* is simply to treat "tangible" and "concrete" as synonyms meaning "not abstract."

(4) What role should preemption have in the determination of whether a claimed invention is directed to a practical application of a 35 U.S.C. 101 judicial exception?

Given the Interim Guidelines as currently drafted, it appears that *after* it is determined that the claimed invention is directed to a practical application, preemption is used to determine whether a claimed invention preempts substantially *all* practical applications. Thus, this question seems to be asking whether the Guidelines should be modified so that preemption has a role in determining whether a claimed invention is directed to a practical application in the first instance.

It is useful to keep preemption as a final, separate inquiry. It provides a practical check on the analysis. The first inquiry should be whether the claimed subject matter falls within one of the statutory categories. The second inquiry should be whether the claimed subject matter covers/encompasses an abstract idea, a law of nature, or a natural phenomenon—or whether it is limited to practical applications of such. Even if the claim is limited to a practical application, it may—as a practical matter—be so broad that it covers all *substantial* practical applications, and therefore in that instance it should be treated as claiming the abstract idea, law of nature, or natural phenomenon itself.

(5) Annex IV to the Patent Subject Matter Eligibility Guidelines explains why the USPTO considers claims to signals *per se*, whether functional descriptive material or non-functional descriptive material, to be nonstatutory subject matter. Does the USPTO analysis represent a reasonable extrapolation of relevant case law? If not, please explain why and provide support for an alternative analysis. If claims directed to a signal per se are determined to be statutory subject matter, what is the potential impact on internet service providers, satellites, wireless fidelity (WiFi), and other carriers of signals?

In terms of the impact a holding that man-made electrical signals are eligible subject matter has on internet service providers and other signal carriers, if such signal carriers merely pass along a signal that is created elsewhere and by doing so they are "making, using, selling, offering for sale, etc." the signal at issue, then they would be direct infringers. But this should not be a valid consideration for determining whether man-made electrical signals constitute eligible subject matter. This same consequence occurs with all kinds of machines, manufactures, and compositions of matter that are sold and resold through a manufacturer-distributor-retail distribution chain or analogous distribution scheme, and this does not affect whether such machines, manufactures, or compositions of matter constitute eligible subject matter.

The PTO analysis in Annex IV, Section (c) (pages 55-57) ("it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101.") does not represent a reasonable extrapolation of relevant case law, and in fact is a *reversal* of position from previous PTO policy and BPAI case law. Up until now, the PTO has stated that "a signal claim directed to a practical application of electromagnetic energy is statutory regardless of its transitory nature." MPEP § 2106 IV.B.1.c. (citing *Morse*). And the BPAI so ruled in nonprecedential Appeal No. 2002-1554 (2003 WL 23175056).

In the new Interim Guidelines, the PTO reasons that signal claims do not fall within any of the four statutory categories. The PTO appears to reason that a signal is not a "manufacture" because it is energy. Evidently, the PTO believes that a "manufacture" must constitute matter, and it is insufficient that energy is a physical "thing." However, this seems to beg the question as to why "energy" does not constitute "matter" within the meaning of § 101, as previously recognized by the PTO.

In *Diamond v. Chakrabarty*, the Supreme Court stated: "this Court has read the term 'manufacture' in accordance with its dictionary definition to mean 'the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand labor or by machinery.'" 447 U.S. at 308 (quoting *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11 (1931)). This definition might appear to preclude electrical signals because signals are not traditionally thought of as "articles." However, the *Chakrabarty* Court did not rely on this definition to decide that the man-made bacterium at issue qualified as a "manufacture" or "composition of matter." Rather, the Court appears to quote this definition as a background matter and immediately thereafter states: "In choosing such

expansive terms as 'manufacture' and 'composition of matter,' modified by the comprehensive 'any," Congress plainly contemplated that the patent laws would be given wide scope." 447 U.S. at 308. Indeed, it is questionable whether the *Chakrabarty* Court could have reached the result it did if it had applied the entirety of the *Brogdex* definition. (And the result in *Brogdex* has been heavily criticized. CHISUM ON PATENTS § 1.02[3] ("The reasoning in the Court's opinion is very weak…It must be concluded that the [*Brogdex*] treatment of the meaning of 'manufacture' is of little or no precedential value.")). In any event, the *Chakrabarty* Court also approvingly cited as background the legislative history for section 101, which states: "A person may have 'invented' a machine or ***manufacture***, which may include ***anything*** *under the sun made by man*…."). A man-made electric signal is a "[]thing…made by man." If the definition of "manufacture" in the legislative history is to apply, the PTO's new position is incorrect. S*ee also* Nancy J. Linck & Karen A. Buchanan, *Patent Protection for Computer-Related Inventions*, 18 Hastings Comm. & Ent. L.J. 659, 677-78 (Summer 1996) ("In the future, the PTO is expected to interpret 'computer-readable medium' broadly, perhaps to include a carrier wave for a data signal…Presuming that the signal is manufactured, as opposed to naturally occurring, there appears to be little basis for rejecting such a claim….").

In general, the courts have widely guided themselves by the "anything under the sun" legislative history quoted above. In *Alappat*, for example, the Federal Circuit reviewed *Chakrabarty* and cited the legislative history, stating: "Thus, it is improper to read into § 101 limitations as to the subject matter that may be patented where the legislative history does not indicate that Congress clearly intended such limitations." 33 F.3d at 1542 (en banc). This tends to indicate that the courts would rely on the legislative history statement rather than the *Brogdex* definition and would therefore determine that a man-made electrical signal is a "manufacture."

It is clear that methods for generating man-made electrical signals and machines for transmitting and receiving such signals constitute eligible subject matter (see the Samuel Morse and Alexander Graham Bell cases as well as the *Arrythmia* and *Alappat* decisions). The one difference, however, is that the issue with a man-made computer program product was whether it fell within the "printed matter exception," whereas the issue with a man-made electrical signal is apparently whether non-matter can fall within the statutory "manufacture" category.

Arguably, the PTO's current position is inconsistent with the result in the *Morse* case. Only the 8th of Morse's claims was held invalid. The fifth and sixth claims were arguably signal claims, especially when viewed in light of language at the end of the sixth claim. The fifth and sixth claims read as follows:

> Fifth. I claim, as my invention, the system of signs, consisting of dots and spaces, and of dots, spaces, and horizontal lines, for numerals, letters, words, or sentences, substantially as herein set forth and illustrated for telegraphic purposes.
>
> Sixth. I also claim, as my invention the system of signs, consisting of dots and spaces, and of dots, spaces, and horizontal lines, substantially as herein set

> forth and illustrated, in combination with machinery for recording them, *as* ***signals*** *for telegraphic purposes*.

56 U.S. at 86. The PTO's statement of its previous position in the MPEP § 2106 relied on *Morse* as authority for its previous position.

There has been no intervening court decision or congressional enactment which would require the PTO to change its prior position on this issue. As a matter of policy, many patents have likely been granted in reliance on the PTO's previous position, which would now be called into question. A few examples were provided in Steve Kunin's presentation to AIPLA on October 28, 2005. These include: U.S. Pat. No. 6,052,150 to Toshiba; U.S. Pat. No. 5,500,739 to Samsung; U.S. Pat. No. 5,534,933 to Samsung; and others.

This situation is analogous to the situation in *In re Beauregard* in that the PTO's current position unjustifiably precludes the most effective type of protection for direct infringement for a particular industry. There are sound policy reasons why a signal or carrier wave used to provide software to users should be treated no differently for purposes of patent eligibility than a computer disc such a CD or floppy disk. It is highly questionable whether a signal or carrier wave is not "tangible" in any event. Simply because one cannot see or touch the medium does not change the reality that such a medium nonetheless is real and is used every day to transmit and download software just as effectively as software contained on a CD. Thus, to deny patent eligibility for such claims is to ignore the reality that such media is most certainly employed in the using and selling of software carried by such a medium, and thus denies claims to a patent owner that would otherwise provide a basis for asserting direct infringement against competitors, thereby relegating such subject matter to assertions of indirect infringement only, with no sound policy basis for doing so. To deny such computer program products of patent protection on this basis appears to be exalting form over substance. Moreover, treating so-called "signal" claims differently from other kinds of computer readable media (e.g., that wireless signals are not tangible, and cannot tangibly embody a computer program or process since a computer cannot understand/realize (i.e. execute) the computer program or process when embodied on the data signal) is equally as true for other media such as floppy disks or CDs. Executable instructions on a disk or CD, like those carried by a signal, also cannot be understood or executed until those computer-executable instructions are read from the disk or CD into the computer's RAM. This is no different for a carrier signal, and hence the asserted factual distinction as to "tangibility" simply lacks merit.

APPENDIX A

The following constitute comments on more minor aspects of the Interim Guidelines:

Passage	Location	Comment
"The following are examples of language that may raise a question as to the limiting effect of the language in a claim: …(B) 'adapted to' or 'adapted for' clauses, (C) 'wherein' clauses."	Section II.C., page 7	The case law is clear that "intended use" and "whereby" clauses may not limit a claim, but no case law is cited to support the proposition that the same should be said for "adapted to," "adapted for," and "wherein" clauses.
"If the application becomes a patent, it becomes prior art against subsequent applications."	Section II.C., page 8	If the application becomes a patent *or is published*, it becomes prior art against subsequent applications.
"A search must take into account any structure or material described in the specification and its equivalents which correspond to the claimed means plus function limitation…."	Section III, page 10	"*the* claimed means plus function limitation" should be "*a* claimed means plus function limitation" because there is no antecedent basis.
"If the claim is directed to a practical application of the § 101 judicial exception producing a result tied to the physical world *that does not preempt the judicial exception*, then the claim meets the statutory requirement of 35 U.S.C. § 101."	Section IV.C.2.b, page 20	Preemption has not yet been discussed at this point in the Guidelines. It is introduced later in Section IV.C.3.
"Likewise, a claim that can be read so broadly as to include statutory and nonstatutory subject matter must be amended to limit the claim to *a practical application*."	Section IV.C.2.b(1), page 21	Shouldn't this read: "Likewise, a claim that can be read so broadly as to include statutory and nonstatutory subject matter must be amended to limit the claim to *the statutory subject matter*."
"In other words, the process must have a result that can	Section IV.C.2.b(2), page 22	There is no antecedent basis for "the process." This

be substantially repeatable or the process must substantially produce the same result again."		section is apparently meant to cover both process claims and other types of claims, but this sentence seems to focus solely on process claims.